

# **Trigger Inhibits**

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# Overview

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- **Trigger inhibits implemented using commercial modules**
  - NIM and Camac logic in 1RR12D
- **16 primary inputs.**
  - can be masked individually from RunControl
  - Controlled from VME-camac interface
    - **Must include b0trin00 in a run to use inhibits**
  - OR of the inputs sent to the Global Level 2 board in the Trigger Supervisor crate
  - Status on LED panel above Ace console

# Overview, 2

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- **Two classes of inputs:**
  - Signals from the FIX MCS control system
    - Includes trips, but takes seconds(?) to reach inhibit
    - Can be masked separately from iFix
    - Inhibit if not OK for data-taking
  - Fast trip signals from power supplies
    - msec time scale
    - minimize chance of corrupt data
      - Most common source of inhibit
- **Logic:**
  - $TI_i = (iFix_i + Trip_i) * Mask_i$
  - Some inputs direct from iFix, others use OR in NIM logic
  - Special case: No iFix for CLC, so fast trip is latched
    - Must go to first floor to reset!

# iFix Inputs

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- **Specify status of particular components.**
  - limited number of inhibit channels
  - divide separate functions within a system to separate MCS output channel
  - combine elements for one piece of experiment from various monitors
    - **Example: CCAL includes**
      - PMT HV
      - CES HV
      - CES LV
- **Key idea:**
  - **Everything should be green on the inhibits iFix page**


# Inhibit channel assignments

- 0 Solenoid
- 1 SVX
- 2 ISL
- 3 COT
- 4 TOF
- 5 Central Calorimeter
- 6 Plug Calorimeter
- 7 Central Muon (CMU, CMX, CMP)
- 8 IMU
- 9 CLC
- 10 L00
- 11 TeV Events
- 12 [unassigned]
- 13 Rack Protection
- 14 VME Power Supplies
- 15 [unassigned]


# Summary of iFix Signals

| Channel | Tag        | Computer |
|---------|------------|----------|
| 1       | SVX_HV     | svxiicon |
| 2       | ISL_HV     | svxiicon |
| 3       | COT_HV     | cot2     |
| 4       | COT_LV     | cot2     |
| 5       | TOF_HV     | tof1     |
| 6       | TOF_LV     | tof1     |
| 7       | CENTRAL_HV | pisabox  |
| 8       | CES_HV     | muon3    |
| 9       | CES_LV     | voltman  |
| 10      | XENON_OFF  | pisabox  |
| 11      | PLUG_HV    | cdfephv  |
| 12      | PES_LV     | voltman  |
| 13      | MUON_HV    | muon3    |
| 14      | MUON_LV    | voltman  |
| 15      | CSP_CSX    | cdfccu   |
| 16      | IMU_HV     | muon3    |
| 17      | IMU_LV     | voltman  |
| 18      | CLC_HV     | clc      |
| 19      | RACKS      | cdf_s3   |
| 20      | VME_POWER  | voltman  |
| 21      | CSP_CCU    | cdfccu   |
| 22      | IMU_CCU    | cdfccu   |
| 23      | L00_HV     | svxiicon |

# iFix Panel
























 TRIGINHIBIT.GRF

8/21/02  
11:49:51 AM



Trigger Inhibit Status

CLOSE

|  |   |  |
|--|---|--|
| DISABLE  SVX System Power<br><small>SVX B5W11 layer 0</small> | DISABLE  CES High Voltage                                      | DISABLE  IMU High Voltage                                   |
| DISABLE  ISL System Power<br><small>ISL B5W5 layer 0</small>  | DISABLE  CES Low Voltage                                       | DISABLE  IMU Low Voltage                                    |
| DISABLE  L00 System Power<br><small>L00 B1W5 layer 3</small>  | ENABLE  Xenon Flasher Status<br><small>Not Implemented</small> | ENABLE  CLC High Voltage<br><small>Not Implemented</small>  |
| DISABLE  COT High Voltage                                     | ENABLE  Plug Calorimeter<br><small>Not Implemented</small>     | ENABLE  Relay Rack Status<br><small>Not Implemented</small> |
| ENABLE  COT Low Voltage<br><small>Not Implemented</small>     | DISABLE  Plug Shower Low Voltage                               | DISABLE  Low Voltage Power                                  |
| ENABLE  TOF High Voltage<br><small>DISABLED</small>          | DISABLE  Central Muon High Voltage                            | DISABLE  Muon Scintillator (CCU)                           |
| DISABLE  TOF Low Voltage                                    | DISABLE  Central Muon Low Voltage                            | DISABLE  IMU scintillator                                 |
| DISABLE  Central Calorimeter                                | DISABLE  Muon Scintillator (Pisa box)                        |  |

# Response to Problems

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- **Inhibit is a GIGO system**
  - **Detector experts responsible for inputs**
    - If you get an inhibit, and you don't understand why: **Call the detector experts!**
    - If you have a problem and you didn't get an inhibit, but you think you should: **Call the detector experts!**
    - If they think they are sending the correct info but the inhibit is behaving badly, call me.
  - **Most common problems**
    - **LEDs are flaky**
      - New system won't have LEDs
    - **Spurious inhibit events in Run Control**
      - New system won't have camac
    - **Somebody resets camac module address**
      - Instructions for fix on web